
THE EVALUATION OF GAMMA RAY EMISSION PROBABILITIES IN THE DECAY OF ^{56}Co

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^{56}Co is a radioactive source that is particularly useful for the calibration of gamma ray detector efficiencies, as it provides a number of gamma rays of usable strength with energies up to 3.5 MeV. The gamma ray emission probabilities in the decay of ^{56}Co have been evaluated as a contribution to the International Atomic Energy Agency's Coordinated Research Programme on "X- and Gamma-Ray Decay Data Standards for Detector Calibration and Other Applications". Data published in 31 papers between 1965 and 2002 for 45 gamma rays with energies between 263 keV and 3612 keV have been reviewed. Discrepancies within the data abound and this paper reports on the use of several procedures to evaluate these discrepant data. It will be shown that the application of different evaluation philosophies can produce similar recommended values. An additional problem encountered in these data is the assumption by some authors of a linear extrapolation for their log-log detector efficiency curves for energies above about 2.5 MeV.